

# Aaron Lee

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## EDUCATION

### B.S.E. Mechanical Engineering

Graduation: May 2027

University of California, Berkeley | College of Engineering

**Relevant Coursework:** Linear Algebra & Differential Equations, [ME108] Mechanical Behavior of Engineering Materials, [ME150] Modeling and Simulation of Advanced Manufacturing Processes, [E26] Three-Dimensional Modeling for Design, [ME100] IOT, [ME104] Dynamics, [E178] Statistics and Data Science, [MEc178] Manufacturing and Designing for the Human Body, [MSE45] Properties of Materials

**Relevant Skills:** CAD, Solidworks, Fusion 360, Onshape, Bambu Studio, Orca Slicer, Matlab, Python, Java, Arduino, GitHub, HTML, Thonny, Operational Amplifiers, Diodes, Transistors, Digital Logic Gates, KiCad, Multivariable Calculus, Applied Linear Algebra, Differential Equations, Discrete math

## PROFESSIONAL EXPERIENCE

### Taiwan Semiconductor Manufacturing Company ( TSMC ): Epitaxy EE | May 2025

Phoenix, AZ

- Experimented with SpotLamp positionings to ensure an ideal thickness and thickness profile of a silicon wafer.
- Collaborated with ASM to analyze different heating positions & tuning temperature inputs to ensure uniform wafer thickness profiles
- Analyzed FDC alarms & SPC charts and conducted root cause analysis on recurring failures and tool problems
- Performed preventative maintenance and supported continuous improvement of maintenance procedures

## PROJECTS & RESEARCH

### Wind Turbine Blade Aerodynamics Generator | May 2024

Berkeley, CA

- Used Solidworks to design Windmill blades and tower. Researched optimal tower shapes and sizes with optimal sturdiness and stability. Researched optimal angle of attack for the windmill blade to ensure peak performance.
- Constructed the base of the Windmill tower with two 3D printed parts. Tested and printed with many materials like ASA, ABS, PETG, PLA, etc. Tested ASA filament for windmill blades for low-density qualities, large temperature changes, strength, and stiffness.

### Prusa MK3s Construction Improvement | Jan 2025

Berkeley, CA

- Custom constructed a Prusa MK3s for 3D printing. Enhancing its capabilities by building an enclosure & a smaller nozzle size.
- Printed necessary parts for constructing the remote access to the Z-axis control system. Injection molded polycarbonate parts for visibility. Constructed the enclosure with polycarbonate and acrylic parts. Manufactured a smaller nozzle with 0.2mm in diameter.
- Assembled stepper motors with drivers. Examined the hardness of materials and mechanical properties of metals. Conducted experiments on the electronic properties of materials. Laser-cut aluminum sheets and wood.

### Automated Lab System Incubator | Jan 2025

Berkeley, CA

- Created an enclosed system to grow and nurture neuron brain cells by exchanging media and building a microscope to observe them.
- Converted a 3D printer and repurposed its end effector to control a micropipette to exchange median and microscope for observation. The end effector will change based on which tool is needed.
- Created a rocking system to tilt old median liquid to ensure proper exchange of new median. Created a microscope with remote control capabilities to zoom in and out for precise observation of the neurons. Created a pipetting system to exchange median and pipette tips to reduce contamination. This project tested my understanding of precision manufacturing.

### 6-axis Robotic Arm | May 2024

Berkeley, CA

- The purpose of the 6-axis robotic arm was to test the limits and understanding of automated manufacturing.
- Created the physical structures and gears using Solidworks. Used the CAD files to 3D print and manufacture the parts. Finally, I used Arduino software and hardware to control the arm remotely. This project tested my design, CAD, circuitry, and software skills

## LEADERSHIP AND WORK EXPERIENCE

### Neurotech, UC Berkeley | *Mechanical Lead* | 2023-Present

Berkeley, CA

- Lead the Automated Lab System Incubator project. Direct the manufacturing, design, and controls software.
- Collaborated with the Connectomics team and RoBLES project. Designed a 5-axis robot to communicate with an EEG.
- Worked with a team of 6 to create a haptic feedback blanket to communicate movement from the multi-axis robot, which is more immersive. Lead manufacturing on an MEA system to send electric potentials to cultured neurons and block external sounds & signals.

### Space Enterprise at Berkeley (SEB), UC Berkeley | *Manufacturing* | 2023-Present

Berkeley, CA

- Designed and manufactured a tracking system to receive telemetry data, like pressure, speed, temperature, etc, from a liquid rocket.
- Collaborated with the avionics division to fit the necessary electrical components with the tracking satellite dish.

## ADDITIONAL INFORMATION

**Interests:** F1/motorsports, Music, Cooking, Photography, IM Soccer, Club Tennis, Basketball, cars, 3D Design